

PROMOTION RECOMMENDATION
UNIVERSITY OF MICHIGAN
MEDICAL SCHOOL
DEPARTMENT OF ANESTHESIOLOGY
DEPARTMENT OF INTERNAL MEDICINE

Andrew L. Rosenberg, M.D., assistant professor of anesthesiology, Department of Anesthesiology, and assistant professor of internal medicine, Department of Internal Medicine, Medical School, is recommended for promotion to associate professor of anesthesiology, with tenure, Department of Anesthesiology, and associate professor of internal medicine, without tenure, Department of Internal Medicine, Medical School.

Academic Degrees:

M.D.	1991	Johns Hopkins University
B.S.	1986	University of Michigan

Professional Record:

2002-present	Assistant Professor of Anesthesiology and Assistant Professor of Internal Medicine, University of Michigan
1998-2000	Lecturer, Department of Internal Medicine, University of Michigan

Summary of Evaluation:

Teaching: Andrew Rosenberg is a board certified internist, anesthesiologist, and intensivist who has directed the training program in Critical Care Medicine since 2002 when he joined the faculty. The American Board of Anesthesiology (ABA) and the Accreditation Council for Graduate Medical Education (ACGME) requires a variety of experiences for anesthesiology residents to be eligible for board certification and for the residency program to be accredited. All of the subspecialties in the operating room, e.g. cardiac anesthesia and pediatric anesthesia, require a minimum of two months of experience for each resident. Critical Care Medicine is required for four months, which is the most of any subspecialty training in the field. Having an active, comprehensive training program and experience in critical care is absolutely essential to having a viable residency program in anesthesiology. Andrew Rosenberg has directed this comprehensive, organ system failure teaching approach to our residents, medical students, and fellows for the past six years. His teaching encompasses daily rounds in the ICU as well as daily lectures and noon-time lectures (which cover the full spectrum of critical care medicine). Of all the subspecialties in anesthesiology, faculty who are trained in critical care are in the highest demand because there have been fewer than 50 graduates per year for the United States over the past ten years. Dr. Rosenberg has not only structured a superb training program, but has also recruited six additional intensivists all of whom participate in this training program. In addition to training medical students, residents, and fellows in critical care, he also participates in mock

oral board exams, and mentors residents who are interested in academic medicine with an interest in critical care.

When Dr. Rosenberg assumed responsibility for our training program in Critical Care, we had no critical care fellows. With the development of our superb training program, he recruited and trained two fellows per year for the past three years.

On a national level, Dr. Rosenberg has been involved in teaching and lecturing throughout the country starting in 1995. Since his appointment as assistant professor, he has lectured at George Washington University Medical Center and at our national meetings of anesthesiologists and intensivists every year since 2004. He has been invited to be a visiting faculty at the University of Wisconsin, Stanford University, and Rush Medical School in Chicago. Internationally, he has lectured at the University of London and the Society of Cardiovascular Anesthesiologists in British Columbia, both in 2007 and 2008.

Dr. Rosenberg is a recognized educator in our institution, our region, nationally, and internationally. His areas of expertise include the management of patients with left ventricular assist devices, acute lung injury, and the management of extracorporeal membrane oxygenation.

Research: Dr. Rosenberg is nationally recognized for his work in investigating the causes for admission and readmission to critical care units. His work is among the most recognized to demonstrate the higher cost and resources associated with critically ill patients being transferred to academic medical centers. He has also developed predicted models to determine which patients are most likely to require readmission to intensive care units. Because of the high demand and high costs of intensivists care units, it is extremely important to know when a patient is appropriate for discharge from the unit for safety reasons and also for expense reasons. Dr. Rosenberg's research has helped define and objectify this process. More recently, Dr. Rosenberg has become involved in outcomes studies, evaluating large clinical and administrative databases. These types of studies will become even more prevalent and more important in the future. His work with the outcomes research team in the Department of Anesthesiology at the University of Michigan is becoming nationally recognized.

Recent and Significant Publications:

Rosenberg AL, Tripathi RS, Blum JM: The most influential articles in critical care medicine. *Journal of Critical Care*, Accepted for Publication 2009.

Rosenberg AL, Dechert R, Park PK, Bartlett B: Association of cumulative fluid balance on outcome in acute lung injury: A retrospective review of the ARDSnet Tidal Volume Study. *Journal of Intensive Care Medicine* 24:35-46, Jan 2009.

Odetola FO, Rosenberg AL, Davis MM, Clark SJ, Dechert RE, Shanley TP: Do outcomes vary according to the source of admission to the pediatric intensive care unit? *Pediatric Critical Care Medicine*. 9(1):20-25, 2008.

Kheterpal S, Tremper KK, Englesbe MJ, O'Reilly J, Shanks AM, Fetterman DM, Rosenberg AL, Swartz RD: Predictors of postoperative acute renal failure after noncardiac surgery in patients with previously normal renal function. *Anesthesiology* 107(6):892-902, 2007.

Rosenberg AL, Hofer TP, Strachan C, Watts CM, Hayward RA: Accepting critically ill transfer patients: Adverse effect on a referral center's outcome and benchmark measures. *Annals of Internal Medicine* 138(11):882-890, 2003.

Service: Dr. Rosenberg's service to the Department of Anesthesiology and the University of Michigan Health System is unsurpassed by any other member of the Department of Anesthesiology. He has directed the training program in critical care throughout his entire faculty appointment as an assistant professor. As the director of Critical Care Medicine he is clinically responsible for the management of the Cardiovascular Center's 24-bed critical care unit and he is also responsible for staffing the Surgical Intensive Care Unit (SICU) two weeks per month with residents, fellows, and faculty. The Cardiovascular Intensive Care Unit has two teams that care for extremely ill patients undergoing complex surgical procedure in the quaternary referral center. These units are staffed 24-hours a day, seven-days a week by a superb team of residents, fellows and faculty that Dr. Rosenberg has developed. We now have eight intensive care faculty, two fellows, and all of our 114 residents participate in providing clinical care in these units. In this role, Dr. Rosenberg fulfills an essential role for the department as well as an essential role for the Health System.

At the same time, Dr. Rosenberg participates in an array of committees in the institution and nationally. Recently, he has become the medical director for the Carelink Electronic Orders Management Project for the University Hospital and Cardiovascular Center. The successful implementation of electronic physician order entry is essential for the success and viability of the Medical Center. This project, which has cost over \$100 million dollars, was extremely complex and implementation of the order entry system occurred nearly flawlessly in one day (unique to the country) at the University Hospital and Cardiovascular Center. Dr. Rosenberg was the medical director at the time of implementation. A large array of people was responsible for the success of this project and Dr. Rosenberg was one of those key individuals.

Nationally, Dr. Rosenberg is involved in committees of the American Board of Internal Medicine and the American Board of Anesthesiology (ABA). He is an exam writer for the ABA's Critical Care Medicine Exam, as well as an oral board examiner for the ABA. For the Society of Critical Care Medicine, he is the chair of the Section of Cardiovascular Critical Care and the chair of the Section on Monitoring and Technology. For the Society of Critical Care Anesthesiologists, he co-chairs the Planning Committee for the Section of Critical Care. Dr. Rosenberg's service clearly spans from his department throughout the University Medical Center and the nation.

External Review:

Reviewer A: "...Dr. Rosenberg has been a leader in the implementation of best ICU practices, and has published fundamental manuscripts in this field. He is also an excellent lecturer, who speaks of these topics throughout the Country."

Reviewer B: "His seminal work in patient readmission to critical care units has done a good deal to change practice across the country....When I reflect on Dr. Rosenberg's ranking with peers, I put him in the top five of all critical care medicine physicians across the country....It is to Andrew's credit that he maintains the national profile of a leader in this subspecialty."

Reviewer C: "...our specialty of anesthesiology has a major shortage of academic critical care specialists. Dr. Rosenberg is extremely well qualified to continue his pathway to a leadership role for us in critical care. I would estimate that he is among a dozen such leaders in our field given his exceptional training and accomplishments to date."

Reviewer D: "...Dr. Rosenberg's accomplishments and representation of the University of Michigan are exemplary. He is one of the five or so leading Intensivists of his generation in this country and he would be readily recruited and tenured at any of a number of leading institutions in the U.S."

Reviewer E: "His work on clinical predictors of intensive care readmissions...has been fundamental to understanding patient risk. Furthermore, his study on clinical outcomes of ICU transfers with regard to a referral center's benchmarking measures has been an important contribution...that will influence future research."

Reviewer F: "In short, Dr. Rosenberg's contributions as a diverse researcher, mentor, clinician, interdisciplinary instructor, community leader, and academic administrative service provider during his time as an Assistant Professor in the Departments of Anesthesiology and Internal Medicine have been laudable. If we chose his career as the standard against which other applicants were held, either for qualitative or quantitative accomplishments, I believe the bar would be set too high by an order of magnitude."

Reviewer G: "Dr. Rosenberg is a consummate, academic critical care physician and outcomes researcher. He has a broad knowledge of the discipline, which is reflected in his training, academic and administrative appointments, and research funding. As a result, he has made a clear impact in his fields of medicine and research, reflected in his peer-reviewed publications, his list of invited lectureships, and academic awards."

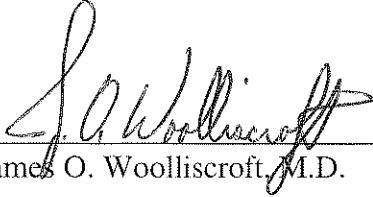
Reviewer H: "He is the kind of top-notch collaborator whose presence at places like the University of Michigan is absolutely essential to the conduct of the multi-centered outcome studies necessary to advance the field of critical care....He would be a thought leader in any department in the country....He has clearly developed a national reputation as a leader in critical care and anesthesia – as a clinician, educator, and outcomes researcher. If you do not promote him, it will afford me the opportunity to recruit him and do so."

Reviewer I: "In addition to his contributions to the written literature, Dr. Rosenberg has been acknowledged nationally and internationally, as a superb lecturer in the fields of Cardiovascular Anesthesia and Critical Care Medicine."

Reviewer J: "I have invited him to speak several times at the annual CPB meeting for the Society of Cardiovascular Anesthesiologists. Each year he has spoken at our meetings he has received rave reviews as a speaker and educator. Andrew is so very organized in his thought process and his ability to deliver a complex subject so that the audience follows and learns."

Summary of Recommendation:

Andrew L. Rosenberg, M.D. is an outstanding clinician anesthesiologist and intensivist, who provides care to the most complex of critically ill patients. His combined clinical skills and background as an internist, anesthesiologist, and intensivist enables him to be a superb clinician teacher to our 114 anesthesiology residents, as well as medical students and fellows in critical care medicine. He is an essential member of our academic medical center, being director of Critical Care in the Department of Anesthesiology and the director of the Cardiovascular Center's Critical Care Unit. Academically, he has brought recognition to our institution with his clinical outcomes research in critical care. He is specifically well-known for his work in assessing admissions and readmissions to critical care units, as well as the management of acute lung injury. Dr. Rosenberg has achieved this level of academic productivity in spite of being an extremely busy clinician and administrator responsible for, not only the critical care units and critical care training program, but also holding a key role in the Hospital's Carelink Order Entry Project. For all these reasons, I strongly support Andrew L. Rosenberg, M.D. for promotion to associate professor, with tenure, in the Department of Anesthesiology and associate professor, without tenure, in the Department of Internal Medicine.



James O. Woolliscroft, M.D.

Dean

Lyle C. Roll Professor of Medicine

May 2009